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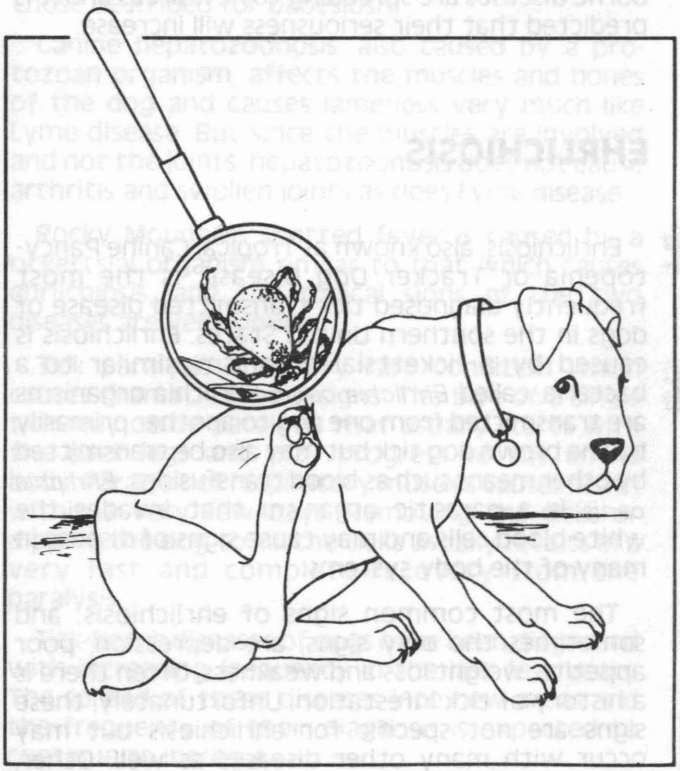
Texas Agricultural Extension Service

# Tick-Borne Diseases of the Dog



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**W. Elmo Crenshaw**
**and Bruce Lawhorn***

An infestation of ticks can cause great discomfort to a dog, as well as contribute to generalized skin problems. Ticks sometimes remove so much blood that they contribute to the death of the dog from anemia. But a much more serious threat is posed by diseases transmitted by ticks from infected to non-infected dogs. These tick-borne diseases are spreading to new areas and it is predicted that their seriousness will increase.

## EHRLICHIOSIS

Ehrlichiosis, also known as Tropical Canine Pancytopenia or Tracker Dog Disease, is the most frequently diagnosed tick-transmitted disease of dogs in the southern United States. Ehrlichiosis is caused by a rickettsial organism, similar to a bacteria, called *Ehrlichia canis*. Ehrlichia organisms are transmitted from one dog to another primarily by the brown dog tick but may also be transmitted by other means such as blood transfusions. *Ehrlichia canis* is a parasitic organism that invades the white blood cells and may cause signs of disease in many of the body systems.

The most common signs of ehrlichiosis, and sometimes the only signs, are depression, poor appetite, weight loss and weakness. Often there is a history of tick infestation. Unfortunately, these signs are not specific for ehrlichiosis but may occur with many other diseases as well. Other, more specific, signs of the disease are fever, enlarged lymph nodes, pale mucous membranes and bleeding tendencies (as evidenced by blood in the feces or urine, hemorrhages under the mucous membranes or, more dramatically, by nose bleed).

Signs of ehrlichiosis usually start about 2 weeks after the dog is exposed to infected ticks. The

*Associate professor of Small Animal Medicine and Surgery and Extension veterinarian, The Texas A&M University System.

disease can be present in either the acute form or the chronic form. The acute form may cause death within a very few days, or acute signs may last for about 3 to 6 weeks. If the dog survives the acute form, the disease may become chronic, with mild signs of disease lingering indefinitely. A dog may recover completely and be free of signs of the disease and yet remain a carrier of the organisms and be a possible infection source for other dogs.

Diagnosis of ehrlichiosis is not easy. Finding the rickettsial organism in blood cells is a positive diagnosis; however, the organisms are few in number and hard to find. Other tests examine blood serum for specific *Ehrlichia* antibodies. If specific antibodies are present, along with clinical signs of the disease, the diagnosis for ehrlichiosis is considered positive.

Although there is a treatment for ehrlichiosis, many dogs die, some suddenly, in the acute stage of the disease. Treatment consists of intensive supportive care and the use of specific anti-rickettsial drugs.

## BABESIOSIS

Babesiosis, also known as Malignant Jaundice, is a world-wide disease and has been recognized longer than any other tick-transmitted disease of dogs. Babesiosis is caused by a protozoan organism, *Babesia canis*, that enters and destroys the red blood cells. The brown dog tick is the principal carrier of babesiosis from infected to non-infected dogs. It can also be spread by blood transfusions or, rarely, passed from an infected bitch to her pups before birth.

When a dog becomes infected with the *Babesia* organism it may become critically sick and die in a few days, or it may become a carrier of the disease without showing any signs of the disease. Signs of the disease include poor appetite, listlessness, fever, weight loss and pale mucous membranes from anemia. However, these signs

are also associated with other diseases. More specific signs for babesiosis are bloody urine and jaundiced mucous membranes and skin.

A veterinarian may be able to diagnose babesiosis by finding the microscopic organisms in the red blood cells. This is not always possible, however. It may be necessary to test the blood serum for *Babesia* antibodies and associate them with clinical signs to make the diagnosis.

The drugs that are most effective for treating babesiosis in other parts of the world are not federally approved for use in the United States.

## BORRELIOSIS

Borreliosis is the most recently diagnosed tick-transmitted disease of dogs. Borreliosis was first diagnosed in people in 1975 in the community of Lyme, Connecticut. Thus it is commonly referred to as Lyme disease. The first diagnosis of Lyme disease in dogs was in the early 1980's and it has since been reported in several areas of the United States.

Lyme disease is caused by a type of bacteria called a spirochete. The organism itself is *Borrelia burgdorferi*. Even though Lyme disease is caused by the same spirochete in both humans and dogs, there is no evidence that the disease is transmitted from dogs to people.

The most common sign of Lyme disease in dogs is intermittant lameness in one or more legs. The lameness is caused by swelling and pain in the joints of the legs and feet. Fever is usually present at some time during the infection. Affected dogs may have ticks at the time of sickness or may have had ticks in the past. The infection usually occurs in dogs less than 4 years old.

Lyme disease may be suspected when clinical signs are present, but the diagnosis must be confirmed by laboratory tests. Treatment of Lyme disease consists of using specific antibiotics.

## OTHER TICK-BORNE DISEASES

Other diseases dogs may get from ticks include canine hemobartonellosis, canine hepatozoonosis, canine Rocky Mountain spotted fever and tick paralysis.

Canine hemobartonellosis is a rickettsial disease of the red blood cells, with signs very much like those described for babesiosis.

Canine hepatozoonosis, also caused by a protozoan organism, affects the muscles and bones of the dog and causes lameness very much like Lyme disease. But since the muscles are involved and not the joints, hepatozoonosis does not cause arthritis and swollen joints as does Lyme disease.

Rocky Mountain spotted fever is caused by a rickettsial organism similar to that which causes ehrlichiosis, and the clinical signs of the two diseases are very similar.

Tick paralysis is a very rare condition which causes dramatic clinical signs. The bite of a single tick may cause paralysis that usually starts with the back legs and may progress to the entire body. Paralysis of respiratory muscles causes death within a very few days. Removing the ticks or dipping the dog to kill the ticks usually results in a very fast and complete recovery from the paralysis.

Tick-borne diseases of dogs have been diagnosed with increasing frequency in the last few years. The spread of these diseases into new areas and the frequency of their diagnosis is expected to continue to increase.

## PREVENTION OF TICK-BORNE DISEASES

Preventing tick-borne diseases in your dog is preferable to treating them. Prevention is best accomplished by eliminating the vector, the tick,

that is responsible for spreading the diseases from infected dogs to non-infected dogs. If dogs become infested with ticks they should be dipped, sprayed or powdered as frequently as recommended to kill the ticks. If dogs have access only to a limited area, a tick eradication program should be followed in that area to eliminate ticks that may be harboring the disease organisms. All label instruction on any dip, spray or powder should be strictly followed for safety and effectiveness.

If any of these diseases have been present in an area, dogs should be tested so that infected dogs can be treated to eliminate the reservoir of the disease and prevent its spread to other dogs.

Your veterinarian will be able to help you with a disease control and tick elimination program.

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